CLAIMS

1. An autotensioner comprising:

a base that has a bottomed tubular shape;

a rocking arm that has a tubular part rotatably supported at the inside of said base;

a pulley that is attached to one end of said rocking arm, and abuts against a belt; and

a torsion coil spring that is housed in said base, and biases rotation of said rocking arm in a direction tensing said belt with respect to said base;

said torsion coil spring being attached eccentrically to the axial center of said base, and said rocking arm being supported to be able to be displaced relative to said base, whereby the first damping force acting on said rocking arm when said belt is tensed becomes relatively larger than the second damping force acting on said rocking arm when said belt is slack.

2. An autotensioner according to claim 1, wherein said rocking arm is attached movably in the radial direction to said base.

3. An autotensioner according to claim 1, further comprising a friction member that is interposed between the outer circumferential surface of said tubular part and the inner circumferential surface of said base, and provided across a range of at least 180 degrees around the axial center of said base, a part of said tubular part being biased to be pushed against said

friction member by said torsion coil spring.

4. An autotensioner according to claim 3, wherein said friction member is provided with a plurality of projections for dispersing the load acting in a direction in which said torsion coil spring pushes and biases said friction member.

5. An autotensioner according to claim 3, further comprising a damping member separate from said friction member, said damping member engaging with said rocking arm movably in the radial direction and frictionally sliding with said base.

6. An autotensioner according to claim 1, wherein the magnitude of the first damping force is 1.5 to 3.5 times the magnitude of the second damping force.

7. A thin autotensioner comprising:

a base that has a cup having an inside diameter;

a rocking arm that is rotatably supported by said base; and

a torsion coil spring that biases said arm in a predetermined direction, said torsion coil spring having an outside diameter larger than said inside diameter, said torsion coil spring being twisted in a direction in which said outside diameter is compressed so as to be housed inside said cup.

8. A thin tensioner according to claim 7, wherein said torsion coil spring is engaged at one end with a first engagement part provided inside said base, and engaged at the other end with a second engagement part provided inside said rocking arm, and relative positions of said first engagement part and said second

engagement part differing when said torsion coil spring engages with the first engagement part and the second engagement part and when said rocking arm is attached to said base.

9. A thin tensioner according to claim 7, wherein an axial length of said torsion coil spring is shorter than said outside diameter.

10. A thin tensioner according to claim 7, further comprising at least one friction member that is interposed between said cup and said rocking arm, and gives a frictional resistance to the rocking of said rocking arm.

11. A thin tensioner according to claim 10, wherein said friction member is composed of a tubular part, and a flange projecting from a bottom of said tubular part to an inside direction of said cup and rocking arm, said friction member exhibiting an L-shape in cross-section.

12. A method of assembly of a thin tensioner comprising:

a first step of twisting a torsion spring coil having an outside diameter larger than an inside diameter of a cup to make the outside diameter smaller than said inside diameter; and

a second step of interposing said twisted torsion coil spring between said cup and rocking arm.

13. A method of assembly of a thin tensioner comprising:

a first step of engaging one end of a torsion coil spring having an outside diameter larger than an inside diameter of a cup, with said cup;

a second step of engaging another end of said torsion coil spring with a rocking arm;

a third step of rotating said rocking arm to twist said torsion coil spring and make the outside diameter smaller than said inside diameter;

a fourth step of bringing said rocking arm into proximity with said cup to compress said torsion coil spring and house it in said cup; and

a fifth step of rotatably fastening said rocking arm to said cup.

14. An autotensioner comprising:

a base that has a first tubular part having a bottomed tubular shape;

a rocking arm that has a second tubular part, which is attached rotatably to an open side of said base and is separated by a certain distance from said first tubular part in the radial direction; and

a friction member that is provided between said first tubular part and said second tubular part, and brakes said rocking arm;

said friction member being partially exposed, and being formed from a material mainly comprised of a polyphenylene sulfide resin.

15. An autotensioner according to claim 14, further comprising a torsion coil spring that is provided at an inside of said second

tubular part, to bias said rocking arm in a certain rotational direction and push said second tubular part and said friction member toward said first tubular part.

16. An autotensioner according to claim 15, further comprising a rocking shaft member that supports said rocking arm rotatably with respect to said base, and passes through the bottom part of said base while forming a clearance with respect to said base.

17. An autotensioner according to claim 14, wherein said friction member is partially cut away in the circumferential direction.

18. An autotensioner according to claim 14, wherein said friction member has a plurality of grooves on a surface of said friction member, which surface frictionally slides with said rocking arm, said grooves extending across the entire axis of said friction member.

19. An autotensioner according to claim 14, wherein an axial length of said first tubular part and the axial length of said second tubular part are substantially equal, and said friction member is in close contact with said first tubular part and said second tubular part across the entire axis of said friction member.

20. A friction member in an autotensioner rotatably attaching a rocking arm to a base, characterized by being provided between said rocking arm and said base, and being formed by a material mainly comprised of a polyphenylene sulfide resin.